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## Guidelines

# Post-natal follow-up for women and neonates during the COVID-19 pandemic: French National Authority for Health recommendations



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### ABSTRACT

**Introduction:** In the context of the stage 3 SARS-Cov-2 epidemic situation, it is necessary to put forward a method of rapid response for an HAS position statement in order to answer to the requests from the French Ministry of Solidarity and Health, healthcare professionals and/or health system users' associations, concerning post-natal follow-up for women and neonates during the COVID-19 pandemic. **Methods:** A simplified 7-step process that favours HAS collaboration with experts (healthcare professionals, health system users' associations, scientific societies etc.), the restrictive selection of available evidence and the use of digital means of communication. A short and specific dissemination format, which can be quickly updated in view of the changes in available data has been chosen.

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## Introduction

On 14th March 2020, France entered stage 3 of the COVID-19 epidemic outbreak. In a letter dated 27th March 2020, the French Direction Générale de la Santé (DGS) referred the matter to the French National Authority for Health (Haute Autorité de Santé; HAS), with a view to drawing up general recommendations designed to ensure continuity of care for pregnant women during lockdown and travel restrictions. Given the very limited data available, the French High Council for Public Health considered pregnant women in the third trimester of pregnancy to be at risk of developing a severe form of COVID-19 [1]. Rare cases of vertical transmission of the virus have been identified (even though no placental viremia, or presence of the virus in amniotic fluid or in cord blood has been published to date) [2–5]. The extension of lockdown and the role and workload of healthcare professionals, lead to re-interviewing organizations for the follow-up of pregnant women in terms of prevention and care. These rapid responses focus on the conditions and organization of the return home of mothers and their children during the lockdown period and the management of cases of women with COVID-19 (without signs of severity) and their newborns returning home. They should be adapted according to the geographical particularities of the epidemic outbreak and access to local resources. These rapid responses are based on the knowledge available at the time of publication and are subject to change as new information becomes available.

## Methods

In the context of the stage 3 SARS-Cov-2 epidemic situation, it is necessary to put forward a method of rapid response for a HAS position statement in order to answer to the requests from the

French Ministry of Solidarity and Health, healthcare professionals and/or health system users' associations.

A simplified 7-step process that favours HAS collaboration with experts (healthcare professionals, health system users' associations, scientific societies etc.), the restrictive selection of available evidence and the use of digital means of communication. A short and specific dissemination format, which can be quickly updated in view of changes in available data has been chosen.

Step 1) Selection of requests and identification of issues requiring a rapid response by the President of the HAS College.

Step 2) Data selection and analysis by the HAS teams in close collaboration with experts named by the National Professional Councils (Conseils Nationaux Professionnels - CNP) and French scientific societies. Data selection has been restricted to the best levels of evidence and in descending order:

- High Council for Public Health recommendations and French health agencies
- Recommendations of French and International scientific societies
- WHO guidelines
- Recommendations from international health agencies (NICE, INESS, etc.)
- Literature reviews and recent 2019 and 2020 scientific literature with rapid critical analysis

Step 3) Drafting of provisional rapid responses by a select working group: HAS team, previously appointed experts and patient associations

Step 4) Review and consultation / information of stakeholders. This step includes a panel of designated healthcare professionals as well as representatives of the French institutions (French General

Health Directorate, High Council for Public Health). These reviews are carried out electronically and allow a response within a short time frame.

Step 5) Finalization of the rapid responses by the previously appointed working group.

Step 6) Validation and dissemination of the rapid responses by the HAS. The texts are then published in a short format on the website of the HAS, scientific societies and associations involved.

A warning is included in the text: "These recommendations, drawn up on the basis of the knowledge available at the date of their publication, are subject to change and are likely to be updated in light of new available data".

The experts' ties of interest are analysed by the HAS ethics officer and the legal department, on the basis of the information available in the "DPI-HEALTH and TRANSPARENCY-HEALTH" databases, and are provided to the members of the HAS College for their information

Step 7) Regular update of the rapid responses taking into account the developments in the scientific literature and the recommendations from scientific societies.

This document was drawn up jointly by the HAS and experts appointed by the Collège National des Gynécologues et Obstétriciens Français (CNGOF), the Collège National des Sages-femmes de France (CNSF), the Collège de la Médecine Générale (CMG), the Société Française de Néonatalogie (SFN), the Société française de pédiatrie (SFP), the Fédération Française des Réseaux de Santé en Périnatalité (FFRSP), the Association Française de Pédiatrie Ambulatoire (AFPA). The rapid responses were reviewed by the Collectif Interassociatif Autour de la Naissance (CIANE).

## Recommendations

### *Discharge after childbirth: conditions and organization of the return home of mothers and their newborns during the COVID-19 pandemic*

As the hospital is considered a COVID-19 cluster, early discharge for mothers and children at low medical, psychological and social risk is recommended (Table 1):

- When possible, within 48 h of the newborn's life for a woman giving birth by vaginal delivery [6].

If discharge from the maternity ward is planned before 48 h of life, the HAS recommendations apply, with regard to the criteria for reinforced surveillance of the newborn and the organization of neonatal screening.

- When possible, within 96 h of the newborn's life for a woman giving birth by caesarean section.

Before any early discharge from the maternity ward, the newborn is examined by a paediatrician according to the situations mentioned above: before 48 h, at 48 h of life and after 96 h.

- It is advisable that a post-natal care consultant accompanies women, particularly those in precarious situations or those in vulnerable psychological or social situations, in order to:
- Carry out screening, prevent complications and identify them early in order to refer the patient to another professional if necessary
- Identify a need for follow-up or additional assistance or referral via the appropriate channels.

### *Anticipate possible infection of the newborn to organize return home*

- Newborns of a COVID + mother should be considered carriers of the virus.
- Routine screening of newborns of COVID- or non-COVID + suspected mothers is not currently recommended.

The American Academy of Pediatrics (AAP) and Society of Obstetricians and Gynecologists (SOGC) recommend that newborns of a COVID + mother be considered suspect for COVID-19. The authors suggest that the value of a screening test is to organize postpartum care and to provide close monitoring of the newborn [7,8]. In the French context, the HAS considers it more prudent to consider any newborn of a COVID + mother as a carrier of the virus. Testing the newborn is therefore not justified. The precautions to be taken are to stay confined at home with the child, to avoid too close contact with family members (especially siblings and people at risk), to wear a surgical mask and to have strict hand hygiene. Temperature and appearance of symptoms of respiratory infection should be monitored in both mother and child.

A systematic review of 23 studies (20 Chinese, 1 Korean, 1 American, and 1 from Honduras) evaluated that of a total of 122 infants tested out of 162 infants born to mothers with COVID-19, 10 % were found to be positive for SARS-CoV-2 by RT-PCR (with one stillborn and one perinatally deceased child with no specified link to COVID-19) [9]. The French Society of Neonatology (SFN) stresses that the results of a test would not influence maternity unit practices (no separation of mother and child and possible breastfeeding) or the implementation of protection and surveillance measures in the event of an infected mother or child (while nevertheless protecting the other children in the household). Indeed, since the beginning of the COVID-19 epidemic outbreak, children, especially newborns, are a more protected group, as evidenced by the low proportion of children among the total number of infected persons (between 1 and 5%) and the more benign nature of their infection [10].

**Table 1**

Post-natal follow-up for women and neonates during COVID-19 pandemic: HAS recommendations.

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<b>Rapid Response #1:</b> Rare cases of vertical transmission of SARS-CoV-2 have been identified and there is no evidence of transmission during breastfeeding. After birth, the newborn is likely to be infected. Lockdown and barrier measures must be followed and reinforced if the mother is infected with COVID-19.
<b>Rapid Response #2:</b> Encourage early discharge, from the 48 <sup>th</sup> hour of life of the newborn, by promoting communication and town/hospital organization.
<b>Rapid Response #3:</b> Have a physical examination of the newborn between the 6 <sup>th</sup> and 10 <sup>th</sup> day after birth carried out by a paediatrician or a general practitioner within the framework of an organized care system.
<b>Rapid Response #4:</b> Propose follow-up by remote consultation or face-to-face based on the assessment of the clinical situation, but also on the woman's social and psychological context.
<b>Rapid Response #5:</b> Ensure the physical and mental well-being of the mother, maintain psychological support for women, including remotely, and accompany the mother or couple in their parenting practices
<b>Rapid Response #6:</b> Reinforce follow-up in case of very early discharge (before 48 h of life)
<b>Rapid Response #7:</b> Pay particular attention to the jaundice risk monitoring circuit and follow-up in the maternity ward in case of confirmed jaundice
<b>Rapid Response #8:</b> Modulate organization of postnatal monitoring according to the geographical particularities of the epidemic outbreak and access to local resources

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Current data, feedback from professionals in the field on the impact of carrying out screening tests on maternity practices, the conditions of return home and findings on child health do not make it possible to systematically recommend a screening test for children. If the mother's COVID status is known, that of the newborn must in fact be considered to be identical. In case of the slightest symptom, both mother and child should be tested.

#### *Adapt the conditions and organization of postnatal follow-up at home for mothers and their newborns*

The conditions and organization of the return home follow the HAS recommendations while adapting to the context of the epidemic [6].

- A first routine visit is carried out by a midwife ideally within 24 h after leaving the maternity unit. The mother leaves the maternity unit with this appointment.
- A second visit can be scheduled if decided by the midwife, by remote consultation or face-to-face depending on the situation. If necessary, she will contact the obstetrician and/or the paediatrician and/or the general practitioner.
- Other visits can be planned according to the medical aspects to be monitored, the mother's vulnerabilities or social or psychological context, and/or if the mother or the couple feel they need them; they can be carried out by remote consultation.

For at-risk women, if hospitalization at home is indicated, it should be preferred depending on the resources available locally [11].

The first health certificate "to be drawn up within the first eight days of life" is systematically issued by a doctor (paediatrician or general practitioner). It can be filled in when leaving the maternity unit.

Given the shorter length of stay in the maternity unit, it is recommended that a newborn child be examined in person between the 6th and 10th day after the birth, preferably by a paediatrician or a general practitioner.

The newborn's visit planned during the second week (close medical supervision of the infant) is left, during an outbreak of COVID-19, to the decision of the paediatrician or general practitioner who examined the child between the 6th and 10th day postpartum.

#### *Maternal monitoring parameters*

- Bleeding, infectious, thromboembolic, urinary, digestive, scarring and pain risk

**Table 2**

: Focus on how to organize discharge for jaundice and the prevention of severe hyperbilirubinemia.

The jaundice risk assessment must be integrated into the reasoning leading up to the decision for discharge from the maternity unit. For each child, compilation of a jaundice profile based on the normogram [23], combined with the recognition of risk factors for severe hyperbilirubinemia, ensures that the child is discharged in optimal safety conditions and thus reduces the risk of readmission to hospital for hyperbilirubinemia.

Jaundice follow-up procedures should:

- be effective within 24h of early discharge from the maternity unit.
- enable quantification of jaundice.
- enable physical evaluation of the child (weighing) and breastfeeding (observation of a feed).
- identify a possible return route (if necessary) to a care facility.

Parents must be informed of the warning signs and of who to contact in the event of an emergency prior to discharge [24].

It is recommended that jaundice data be recorded in the child's health record, or that this information (risk factors, profile outcome, diagnosis and test results) be mentioned on the immediate post-partum liaison sheet for the professional(s) providing follow-up [6].

In practice, if the midwife does not have a bilirubinometer, she should be able to arrange for a bilirubin test at the maternity ward. As part of early discharge during the COVID-19 pandemic, it is important to monitor clinical signs and arrange for bilirubin monitoring at a private practice or at the hospital if necessary.

In the event of jaundice, phototherapy must be organized via secure channels in the maternity unit where the woman gave birth.

- Signs of physical and psychological distress (quantity and quality of sleep, state of fatigue, mood); postpartum depression (which can occur within two weeks of birth or later), especially in women who have shown signs of depression since pregnancy and/or express excessive concern about their maternal capacity [11]; situation of domestic violence in the context of lockdown [12]. Psychological support may be necessary.
- Breastfeeding difficulties, adapted response to newborn crying.
- Risk of child abuse, especially Shaken Baby Syndrome: the quality of support from family and friends is essential, as is recourse to psychological support [13].
- In a context of lockdown and family isolation, it is essential to reinforce postnatal monitoring by remote consultation, particularly for monitoring breastfeeding [14], screening for postnatal depression, and support for the mother or couple in their parenting practices (especially for first time mothers): two postnatal remote consultations can be conducted by a midwife between the 8th day after delivery and the postnatal visit.
- The postnatal visit is maintained at the hospital/practice six weeks after delivery: gynaecological examination, method of contraception, vaccinations, screening smears, pelvic floor physiotherapy, experience of childbirth and the aftermath of childbirth, assessment of signs of distress or depression, relationship with the child and within the couple.
- Pelvic floor physiotherapy sessions, usually started six weeks after delivery, can be arranged remotely.

#### *Child monitoring parameters*

- Risk of jaundice (focus on Table 2)
- Risk of heart disease: if there is any doubt as to the cardiac auscultation, or if the femoral pulses are not perceived or there are any other signs of heart failure, a special telephone help line must be set up to reach the maternity ward paediatrician, with a line through to the paediatric cardiology department.
- Risk of dehydration/undernutrition: weight, monitoring of effective feeding (well established breastfeeding or artificial breastfeeding): urine output at each nappy change, spontaneous and regular bowel function (three to four stools/day).
- Infectious risk (COVID-19 and others): temperature (hypo or hyperthermia), respiratory rate, hemodynamic disorders (longer capillary refill time), diarrhoea.

#### *Reinforce surveillance in case of very early discharge, before 48 h*

- This can only be possible if local resources and organization permit it, including the organization of neonatal screening tests

and timely completion of those tests. Screening for metabolic diseases must be carried out between 48 and 72 h of life with transmission of blotters within 24 h to guarantee reliability [15].

- Communication and town/hospital organization is essential for the appropriate care of the mother and child.
- Early examination of the newborn by the paediatrician in the maternity ward before discharge in the same way as for discharge at 48 h has to be considered, as well as early and rapid follow-up by the midwife at home. Monitoring by bilirubinometer should take place after 24 h according to the local organization.

#### *Points of caution regarding neonatal screening tests*

The results of neonatal screening tests should be routinely recorded in the child's health record.

- Systematic neonatal screening for metabolic diseases: In view of the lockdown measures taken by the post office, which have an impact on the delivery of "blotting paper" tests to neonatal screening reference centres, discharge from the maternity ward after 48 h will ensure that neonatal screening can be carried out in good conditions.
- Hearing screening: If hearing screening could not be carried out in the maternity ward (at the earliest after 24 h) or if a check-up is necessary, schedule this screening or obtain diagnostic confirmation once the epidemic situation has passed.
- Screening for critical congenital cardiopathies: measurement of right upper limb and lower limb saturation between 6 h and 24 h before leaving the maternity hospital: definition of the action to be taken in liaison with the referring maternity hospital paediatric cardiologist.
- Screening for congenital hip dislocation: repeated physical examination at each routine newborn and infant visit. In case of abnormal physical examination (abduction limitation, instability), an ultrasound should be performed and treatment should be implemented further to orthopaedic assessment. If risk factors are present, a hip ultrasound should be performed before the age of 3 months.

#### *Support for ambulatory care*

The implementation of these rapid responses implies essential support for the care offer, which is currently below standard in the context of the COVID-19 epidemic (closure of some day care structures, few personal protection measures in terms of equipment for midwives, less post-natal home follow-up by midwives). The day care structures (*Maternal and child welfare* in France is the name of the protection system for mothers and children) have an important role to play in the continuity of care and must participate in the follow-up of women and their children (doctor, home-visiting nursery nurse) by restricting their activities, while following barrier measures. The organization of postnatal monitoring should be modulated according to the geographical particularities of the epidemic outbreak and access to local resources, perinatal health networks playing a major role.

In the context of COVID-19, teamwork, communication and information sharing must be strengthened between the hospital and town to increase efficiency and safety. The methods are determined jointly by the healthcare professionals involved in caring for women (midwives, obstetricians, paediatricians, general practitioners, etc.). Given the midwives' role outside the hospital in monitoring women and their children after birth, it is essential to ensure they have all the appropriate personal protective

equipment they need (masks, overalls, gloves, etc.). Institutions must draw up a list of midwives outside the hospital who can provide follow-up care for women and their children after birth to reinforce the town/hospital link. The role of perinatal networks is essential in the epidemic context. All of these measures aim to step up ambulatory care and facilitate the management of patients with COVID-19 by obstetrical teams in health facilities. Ambulatory care is defined as medical care carried out by any health non-hospital personnel (midwife, general practitioner and gynaecologist-obstetrician) who work in the city.

#### *Women and their newborns returning home with COVID-19 (without signs of severity)*

The general practitioner and all home-visiting healthcare professionals must be informed of the mother's infection.

Newborns without comorbidities can stay with their COVID-19 + mother and be breastfed (unless the mother asks to be separated from her child).

The French Society of Neonatology (SFN) and the Paediatric Infectious Pathology Group (GPIP) do not currently recommend separation of mother and child and do not contraindicate breastfeeding [10].

#### *Mother and child monitoring parameters*

A mother with COVID-19 and her child are monitored by their general practitioner and, if necessary, the paediatrician for the newborn.

At the same time, the midwife can ensure postnatal supervision of the mother and the child in liaison with the referring obstetrical team.

Any woman or child with signs of severe COVID-19 or aggravating comorbidities should be taken to a health care facility.

#### *Monitoring and follow-up for a COVID-19+ mother*

- Active monitoring of her temperature and onset of symptoms of respiratory infection (fever, cough, breathing difficulty, sensation of suffocation etc.).
- Strict lockdown with the child.
- Too close contact with family members should be avoided.
- A mask (surgical mask) should be worn.
- Strict hand hygiene: hands should be washed before taking care of the child.
- The general practitioner or the nurse should contact the mother every 24 h to follow-up on the infection (tracing the results to be recovered and calls made), giving priority to remote consultation or remote care when possible.
- Postnatal monitoring of mother and child by the midwife in liaison with the referring obstetrical team.
- Exit from isolation after recovery as in the general population. [15]
- Consultation with a doctor three weeks after discharge.

#### *Monitoring and precautions for infants born to mothers with COVID-19*

- Active monitoring of temperature and the onset of symptoms of respiratory infection (fever, cough, breathing difficulties, etc.), diarrhoea.
- Strict lockdown with the mother.
- It is not recommended for newborns to wear masks
- First consultation within 24 h of arrival at home with the midwife, then a consultation between the 6th and 10th day postpartum, preferably at the paediatrician's or general

practitioner's practice, in accordance with the safety protocol in place (for example at the end of a consultation with a paediatrician at a special clinic for newborns or small infants). Although compulsory, in the event of a COVID-19 epidemic, examination of the newborn planned during the second week (close medical supervision of the infant) is decided by the paediatrician or general practitioner who examined the child between the 6th and 10th postpartum.

- Any symptoms in the newborn should be reported to the health care professional who looks after the child and should give rise to a consultation, and determine the frequency of follow-up.
- In case of emergency: go to the paediatric emergency department of the reference hospital having first called the emergency services.
- No data are available on the impact of early maternal infection during pregnancy on child development: close monitoring of the child at each visit [16,17].

### Lockdown at home

As with any person confirmed to be COVID-19+, self-isolation at home for 14 days after the onset of the first symptoms is recommended and special precautions should be taken. The precautions applicable to women with COVID-19 are the same as for the general population (barrier measures, social distancing, lockdown) to reduce the risk of transmission. Specific recommendations also apply.

Monitoring instructions and hygiene precautions to be observed must be given and explained to the woman or couple before leaving the maternity unit.

### Mother and child organization at home after leaving the maternity unit

- At home, the mother is advised to isolate with the child, if possible, in a separate room, avoiding contact with the other occupants, and to air the room regularly. A hotel room is available if the mother prefers (COVISAN system in Paris, or equivalent elsewhere).
- The cot should be placed about six feet from the mother's bed or chair.
- All occupants should wash their hands frequently after using the bathroom and toilet, which must be cleaned regularly with bleach or disinfectant.
- Surfaces touched regularly (door handles, mobile phones, etc.) are cleaned daily and disinfected).
- It is not advisable to receive visits unless they are essential, such as visits from a midwife, nurse, childcare worker or home help.

### Breastfeeding

Studies show that the viral genome is not found in the breast milk of COVID-19-infected mothers [3,18–20]. Breastfeeding therefore does not appear to be contraindicated [21,22]. A COVID-19+ mother, or suspected to have COVID, and symptomatic, should take all the necessary precautions to avoid transmitting the virus to her infant. She should wash her hands before touching the infant, wear a face mask, and if possible, during breastfeeding. If the mother is expressing milk with a manual or electric breast pump, or feeds her child with baby formula, she should wash her hands before touching any part of the breast pump or bottle and follow the recommendations for proper cleaning of the breast pump or bottle after each use.

### Implement protective measures during examination and care of the newborn child

During examination or care of the newborn, during the first month of life, it is recommended to wear a mask and to wash hands beforehand (using soap or hand sanitizer) The newborn must be seen again for the first month visit in person. Mandatory vaccinations must be administered at two months of life (possible from 6 weeks).

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### Declaration of Competing Interest

The authors declare no competing interests

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